

CLAIMS

What is claimed is:

1. A wire winding machine, comprising:
 - at least one wire winding mandrel for winding wire thereon;
 - 5 a traverse for directing wire axially along each said mandrel;
 - a controller for coordinating the axial position of said traverse with the radial position of each said mandrel to wind wire onto said mandrel in a predetermined package;
 - and
 - 10 a portable operator console associated with said controller in data transfer relationship, said console operative to receive from an operator at least one command related to a wire winding procedure and transmit said command to said controller.
2. The machine of claim 1 wherein said console is additionally operative to receive from an operator at least one operating parameter of the wire winding procedure and transmit said operating parameter to said controller.
- 15 3. The machine of claim 2 wherein said console receives from the operator said at least one operating parameter of the wire winding procedure in response to displaying a prompt to the operator.
4. The machine of claim 1 wherein said console comprises:
 - an operator panel including at least one button and at least one indicator; and
 - 20 a data terminal comprising at least a keypad and an alphanumeric display.
5. The machine of claim 4 wherein said data terminal is removable from said console.
6. The machine of claim 1 further comprising a safety interlock wherein said wire winding procedure, when halted at predetermined points, proceeds only upon an affirmative actuation of said safety interlock by an operator.
- 25 7. The machine of claim 6 wherein said safety interlock comprises a portable footswitch.

8. The machine of claim 2 wherein said operating parameter comprises at least one of wire speed, length of wire per winding, constant velocity or constant RPM mode of operation, wire gauge, wire tension, wire winding profile, and traverse position to angular mandrel position data.

9. The machine of claim 1 wherein said console includes an input device comprising at least one of a button, keypad, keyboard, mouse, touchscreen, light pen, and microphone with associated voice recognition technology.

10. The machine of claim 1 wherein said console includes an output device comprising at least one of an indicator light, LED display, LCD display, video display, and audio indicator.

11. The machine of claim 1 wherein data transfer between said console and said machine occur over a data link comprising at least one of wire, optical, infrared, laser, sonic, ultrasonic, electromagnetic, RF, UHF, IEEE-802, and BLUETOOTH.

12. A wire winding machine, comprising:
at least one wire winding mandrel for winding wire thereon;
a traverse for directing wire axially along each said mandrel;
a controller for coordinating the axial position of said traverse with the radial position of each said mandrel to wind wire onto said mandrel in a predetermined package;
and
a remote interface for data communications between said controller and at least one remote data terminal.

13. The machine of claim 12 wherein said remote interface comprises a network interface, said network interface being connected to a data communications network, and said at least one remote data terminal comprises at least one computer connected in data communications relationship with said digital data communications network.

14. The machine of claim 13 wherein said data communications network comprises a network included in the IEEE 802 family of LAN/MAN standards.

15. The machine of claim 13 wherein said data communications network is selected from the group including Token Ring, Ethernet, FIREWIRE, and BLUETOOTH.

16. The machine of claim 13 wherein said data communications network is an Ethernet LAN.

17. A method of remotely programming a wire winding machine comprising:

5 inputting control information into a remote terminal;
 directing the control information from said terminal to a network interconnected between
 said terminal and a controller associated with said wire winding machine; and
 transferring said control information from said network to said controller where the
 control information is utilized to program the operation of said wire winding
 machine.

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18. The method of claim 17 wherein said wire winding machine includes a traverse for
 directing wire axially along at least one wire winding mandrel, and wherein said control
 information comprises a profile defining the axial position of said traverse with respect to the
 radial position of each said mandrel for a plurality of said radial positions.

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19. The method of claim 17 further comprising sending at least one prompt for said control
 information from said controller across said network to said remote terminal.

20. The method of claim 19 wherein inputting control information into said remote terminal
 occurs in response to receiving said prompt at said remote terminal.

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